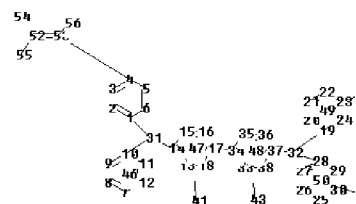
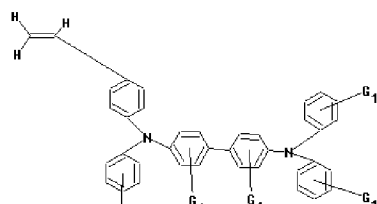


# STN-10/569,832



chain nodes :

31 32 40 41 43 44 45 52 53 54 55 56

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23  
24 25 26 27 28 29 30 33 34 35 36 37 38

chain bonds :

1-31 4-53 10-31 14-31 17-34 19-32 28-32 32-37 52-53 52-54 52-55 53-56

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15  
15-16 16-17 17-18 19-20 19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27  
27-28 28-29  
29-30 33-34 33-38 34-35 35-36 36-37 37-38

exact/norm bonds :

1-31 10-31 14-31 19-32 28-32 32-37

exact bonds :

4-53 17-34 52-53 52-54 52-55 53-56

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15  
15-16 16-17 17-18 19-20 19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27  
27-28 28-29  
29-30 33-34 33-38 34-35 35-36 36-37 37-38

isolated ring systems :

containing 1 : 7 : 13 : 19 : 25 : 33 :

G1:H,CH3,Ak

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom  
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom  
20:Atom 21:Atom  
22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom  
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56:CLASS

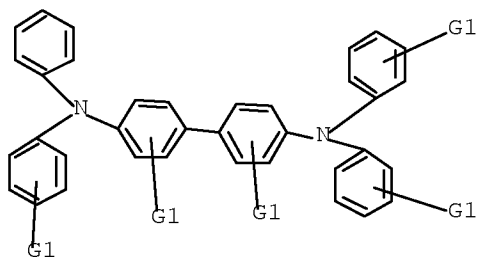
L1 STRUCTURE UPLOADED

=> d 11

L1 HAS NO ANSWERS

L1 STR

=



G1 H, Me, Ak

Structure attributes must be viewed using STN Express query preparation.

=> s 14

L5 1192 L4

=> s 15 and electrolumin?

113309 ELECTROLUMIN?

L6 396 L5 AND ELECTROLUMIN?

=> s 16 and (phosphor? dopant?)

941327 PHOSPHOR?

147769 DOPANT?

1204 PHOSPHOR? DOPANT?

(PHOSPHOR? (W) DOPANT?)

L7 15 L6 AND (PHOSPHOR? DOPANT?)

=> d ibib abs hitstr 12-15

L7 ANSWER 12 OF 15 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2004:391687 CAPLUS Full-text

DOCUMENT NUMBER: 140:383225

TITLE: Organic electroluminescent elements with high emission efficiency and displays having them  
INVENTOR(S): Oshiyama, Tomohiro; Yamada, Taketoshi; Kita, Hiroshi  
PATENT ASSIGNEE(S): Konica Minolta Holdings Inc., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 28 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2004139819	A	20040513	JP 2002-302865	20021017
JP 4483167	B2	20100616		
PRIORITY APPLN. INFO.:			JP 2002-302865	20021017

OTHER SOURCE(S): MARPAT 140:383225

AB The element, useful for blue-emitting LEDs, comprises (A) an anode, (B) a layer containing 1st hole transporters (e.g. arylamines), (C) a layer containing 2nd hole transporters, and (D) a luminescent layer containing host compds. and phosphorescent dopants, wherein the min. triplet excitation energy of the 1st hole transporters (T1a), the 2nd hole transporters (T1b), the host compds. (T1c), and the dopants (T1d) satisfy the relationships of T1b > T1c, T1a < T1c, and T1c > T1d. The maximum luminescence wavelength may be 380 to 500 nm. Ionization potentials of the hole transporters, the dopants, and the host compds. are also specified.

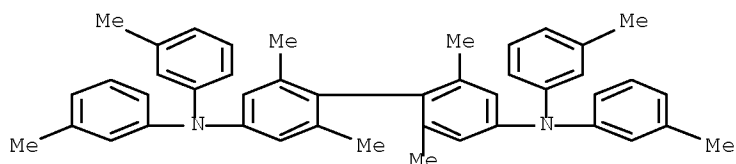
IT 612519-55-8

RL: DEV (Device component use); USES (Uses)

(hole transporter; organic EL elements with high emission efficiency for displays)

RN 612519-55-8 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',6,6'-tetramethyl-N4,N4,N4',N4'-tetrakis(3-methylphenyl)- (CA INDEX NAME)



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L7 ANSWER 13 OF 15 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2004:118662 CAPLUS Full-text

DOCUMENT NUMBER: 140:172301

TITLE: Organic electroluminescent elements with improved brightness and durability and color displays using them

INVENTOR(S): Ueda, Noriko; Yamada, Taketoshi; Kita, Hiroshi

PATENT ASSIGNEE(S): Konica Minolta Holdings Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 57 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2004047443	A	20040212	JP 2003-134267	20030513
PRIORITY APPLN. INFO.:			JP 2002-140103	A 20020515
OTHER SOURCE(S):			MARPAT 140:172301	

AB The elements contain , R1R2R3N [R1-3 = substituted p-A-Ph; A = (un)substituted aromatic hydrocarbyl], preferably in hole-transport layers. The elements may have light-emitting layers containing phosphorescent complexes of Group VIII metals (Os, Ir, or Pt, preferably) and  $\geq 1$  fluorescent compds. having maximum fluorescence wavelength longer than maximum emission wavelength of the complexes.

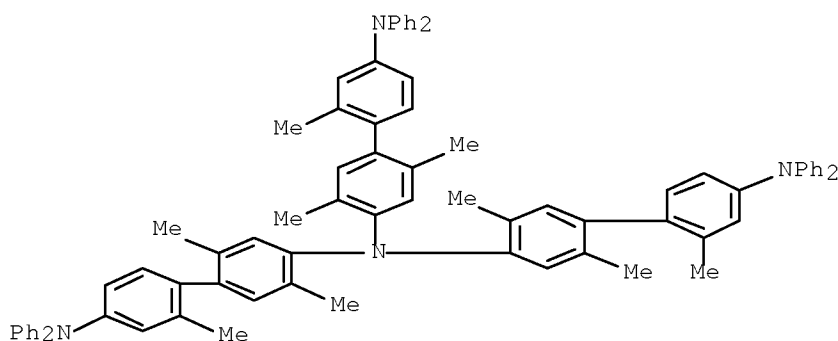
IT 655240-55-4

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(hole-transport layer; organic EL elements containing triphenylamine-based compds. with improved brightness and durability for displays)

RN 655240-55-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-(diphenylamino)-2,2',5-trimethyl[1,1'-biphenyl]-4-yl]-2,2',5-trimethyl-N',N'-diphenyl- (9CI) (CA INDEX NAME)



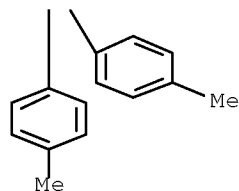
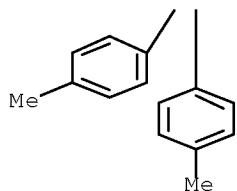
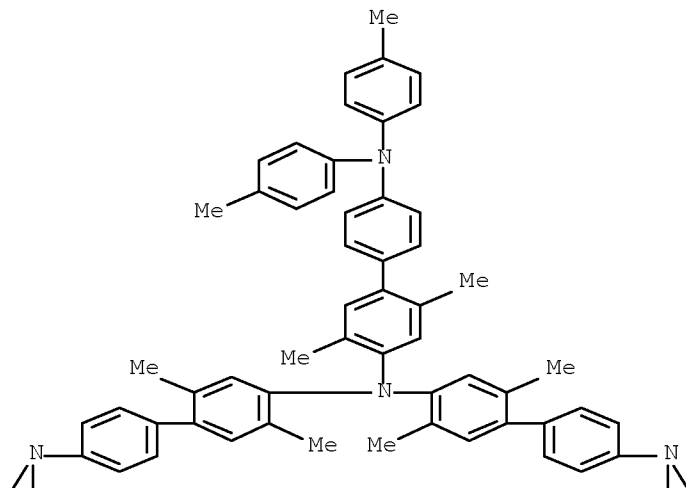
IT 655240-65-6

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(light-emitting layer; organic EL elements containing triphenylamine-based compds. with improved brightness and durability for displays)

RN 655240-65-6 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-[bis(4-methylphenyl)amino]-2,5-dimethyl[1,1'-biphenyl]-4-yl]-2,5-dimethyl-N4',N4'-bis(4-methylphenyl)- (CA INDEX NAME)



L7 ANSWER 14 OF 15 CAPLUS COPYRIGHT 2011 ACS on STN  
 ACCESSION NUMBER: 2004:118661 CAPLUS Full-text  
 DOCUMENT NUMBER: 140:172300  
 TITLE: Organic ~~electroluminescent~~ elements with improved brightness and durability and displays using them  
 INVENTOR(S): Ueda, Noriko; Yamada, Taketoshi; Oshiyama, Tomohiro; Kita, Hiroshi  
 PATENT ASSIGNEE(S): Konica Minolta Holdings Inc., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 43 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004047442	A	20040212	JP 2003-132872	20030512
JP 4442114	B2	20100331		
PRIORITY APPLN. INFO.:			JP 2002-138307	A 20020514
OTHER SOURCE(S):	MARPAT 140:172300			

AB The elements contain R1R2NQ1Q2NR3R4 [R1-4 = (un)substituted Ph; Q1,2 = (un)substituted p-phenylene; Q1 = Q2 ≠ p-phenylene], preferably in hole-transport layers. The elements may have light-emitting layers containing phosphorescent complexes of Group VIII metals (Os, Ir, or Pt, preferably) and ≥1 fluorescent compds. having maximum fluorescence wavelength longer than maximum emission wavelength of the complexes.

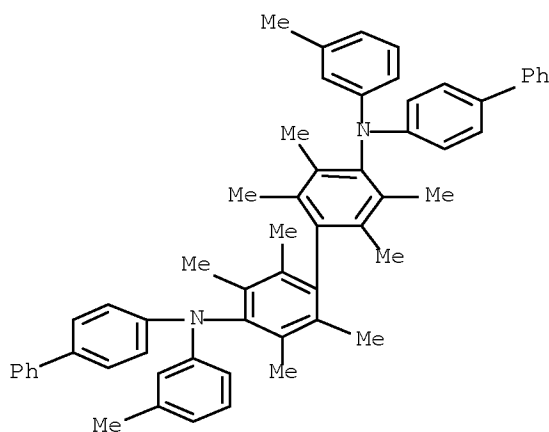
IT 478370-39-7 655236-12-7

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(hole-transport layer; organic EL elements containing tetraphenylbenzidine-based compds. with improved brightness and durability for displays)

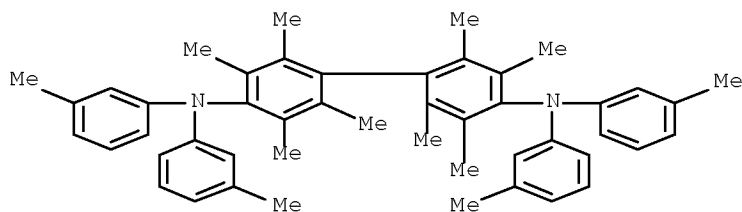
RN 478370-39-7 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'-bis([1,1'-biphenyl]-4-yl)-2,2',3,3',5,5',6,6'-octamethyl-N4,N4'-bis(3-methylphenyl)- (CA INDEX NAME)



RN 655236-12-7 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',3,3',5,5',6,6'-octamethyl-N4,N4,N4',N4'-tetrakis(3-methylphenyl)- (CA INDEX NAME)

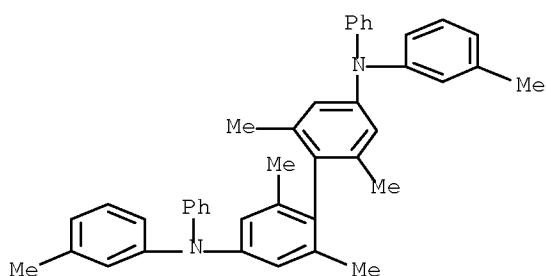


IT 453590-46-0 478262-76-9

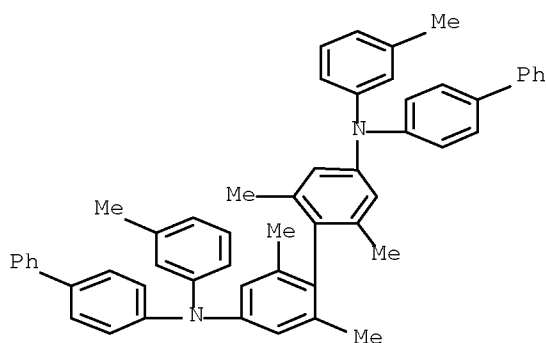
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(hole-transport or light-emitting layer; organic EL elements containing tetraphenylbenzidine-based compds. with improved brightness and durability for displays)

RN 453590-46-0 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',6,6'-tetramethyl-N4,N4'-bis(3-methylphenyl)-N4,N4'-diphenyl- (CA INDEX NAME)

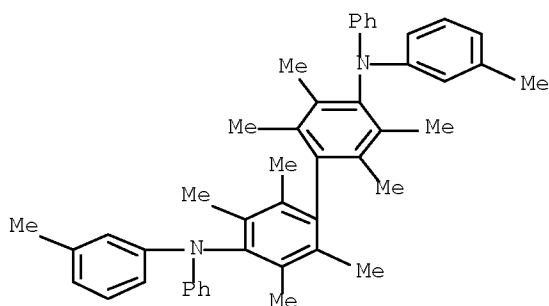


RN 478262-76-9 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'-bis([1,1'-biphenyl]-4-yl)-2,2',6,6'-tetramethyl-N4,N4'-bis(3-methylphenyl)- (CA INDEX NAME)



IT 453590-45-9  
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
 (light-emitting layer; organic EL elements containing tetraphenylbenzidine-based compds. with improved brightness and durability for displays)

RN 453590-45-9 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',3,3',5,5',6,6'-octamethyl-N4,N4'-bis(3-methylphenyl)-N4,N4'-diphenyl- (CA INDEX NAME)



L7 ANSWER 15 OF 15 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2001:400126 CAPLUS Full-text

DOCUMENT NUMBER: 135:187081

TITLE: High-efficiency organic electrophosphorescent devices

AUTHOR(S): Thompson, Mark E.; Zhou, Theodore X.; Lamansky, Sergey; Djurovich, Peter; Murphy, Drew; Abdel-Razaq, Feras; Forrest, Stephen R.; Baldo, Marc A.; Burrows, Paul E.; Adachi, Chihaya; Michalski, Lech; Rajan, Kamala; Brown, Julie J.

CORPORATE SOURCE: Department of Chemistry, University of Southern California, Los Angeles, CA, 90089, USA

SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (2001), 4105(Organic Light-Emitting Materials and Devices IV), 119-124  
CODEN: PSISDG; ISSN: 0277-786X

PUBLISHER: SPIE-The International Society for Optical Engineering

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Saturated red, orange, yellow and green OLEDs were fabricated using phosphorescent dopants. Using phosphorescence based emitters the inherent 25% upper limit on emission observed for traditional fluorescence based systems was eliminated. The quantum efficiencies of these devices are quite good, with measured external efficiencies >15% and >40 lum/W (green) in the best devices. The phosphorescent dopants in these devices are heavy metal containing mols. (i.e. Pt, and Ir), prepared as both metalloporphyrins and organometallic complexes. The high level of spin orbit coupling in these metal complexes gives efficient emission from triplet states. In addition to emission from the heavy metal dopant, it is possible to transfer the exciton energy to a fluorescent dye, by Forster energy transfer. The heavy metal dopant in this case acts as a sensitizer, using both singlet and triplet excitons to efficiently pump a fluorescent dye. The important parameters in designing electrophosphorescent OLEDs as well as their strengths and limitations are discussed. Accelerated aging studies, on packaged devices, showed that phosphorescence based OLEDs can have very long device lifetimes.

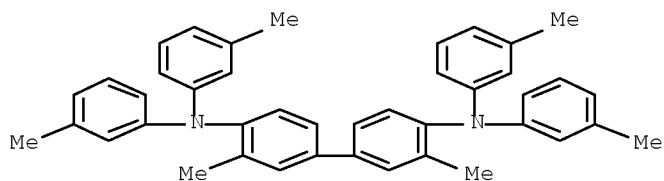
IT 105465-14-3, N,N,N',N'-Tetrakis(3-methylphenyl)-3,3'-dimethylbiphenyl-4,4'-diamine

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)  
(high-efficiency organic electrophosphorescent devices containing)

RN 105465-14-3 CAPLUS

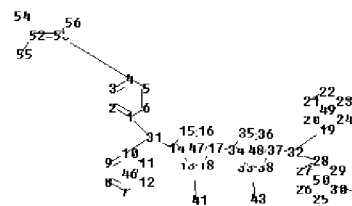
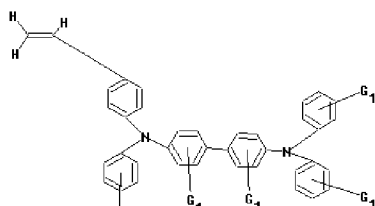
CN [1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl-N4,N4,N4',N4'-tetrakis(3-methylphenyl)- (CA INDEX NAME)





OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD  
(4 CITINGS)  
REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

Uploading C:\Program Files\STNEXP\Queries\10569832#1.str



chain nodes :  
31 32 40 41 43 44 45 52 53 54 55 56  
ring nodes :  
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23  
24 25 26 27 28 29 30 33 34 35 36 37 38  
chain bonds :  
1-31 4-53 10-31 14-31 17-34 19-32 28-32 32-37 52-53 52-54 52-55 53-56  
ring bonds :  
1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15  
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27-28 28-29  
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exact/norm bonds :  
1-31 10-31 14-31 19-32 28-32 32-37  
exact bonds :  
4-53 17-34 52-53 52-54 52-55 53-56  
normalized bonds :  
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15-16 16-17 17-18 19-20 19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27  
27-28 28-29  
29-30 33-34 33-38 34-35 35-36 36-37 37-38  
isolated ring systems :  
containing 1 : 7 : 13 : 19 : 25 : 33 :

G1:H,CH3,Ak

Match level :

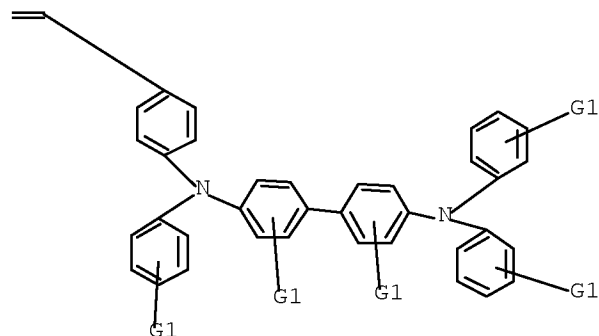
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46:Atom 47:Atom 48:Atom 49:Atom 50:Atom 52:CLASS 53:CLASS 54:CLASS 55:CLASS  
56:CLASS

L8 STRUCTURE UPLOADED

=> d 18

L8 HAS NO ANSWERS

L8 STR



G1 H, Me, Ak

Structure attributes must be viewed using STN Express query preparation.

=> s 18

SAMPLE SEARCH INITIATED 13:07:33 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 922 TO ITERATE

100.0% PROCESSED 922 ITERATIONS

39 ANSWERS

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*

BATCH \*\*COMPLETE\*\*

PROJECTED ITERATIONS: 16619 TO 20261

PROJECTED ANSWERS: 406 TO 1154

L9 39 SEA SSS SAM L8

=> s 18 full

FULL SEARCH INITIATED 13:07:45 FILE 'REGISTRY'  
FULL SCREEN SEARCH COMPLETED - 17641 TO ITERATE

100.0% PROCESSED 17641 ITERATIONS 634 ANSWERS  
SEARCH TIME: 00.00.01

L10 634 SEA SSS FUL L8

This file contains CAS Registry Numbers for easy and accurate  
substance identification.

=> s l10

L11 455 L10

=> s l11 and (phosphor? dopant?)

941327 PHOSPHOR?

147769 DOPANT?

1204 PHOSPHOR? DOPANT?

(PHOSPHOR?(W)DOPANT?)

L12 5 L11 AND (PHOSPHOR? DOPANT?)

=> d ibib abs hitstr 10-12

5 ANSWERS ARE AVAILABLE. SPECIFIED ANSWER NUMBER EXCEEDS ANSWER SET SIZE

The answer numbers requested are not in the answer set.

ENTER ANSWER NUMBER OR RANGE (1):end

=> d hist

(FILE 'HOME' ENTERED AT 13:02:47 ON 13 JAN 2011)

FILE 'REGISTRY' ENTERED AT 13:03:13 ON 13 JAN 2011

L1 STRUCTURE UPLOADED

L2 50 S L1

L3 25760 S K1 FULL

L4 1585 S L1 FULL

FILE 'CAPLUS' ENTERED AT 13:04:34 ON 13 JAN 2011

L5 1192 S L4

L6 396 S L5 AND ELECTROLUMIN?

L7 15 S L6 AND (PHOSPHOR? DOPANT?)

FILE 'STNGUIDE' ENTERED AT 13:06:11 ON 13 JAN 2011

FILE 'REGISTRY' ENTERED AT 13:07:00 ON 13 JAN 2011

L8 STRUCTURE UPLOADED

L9 39 S L8

L10 634 S L8 FULL

FILE 'CAPLUS' ENTERED AT 13:07:55 ON 13 JAN 2011

L11 455 S L10

L12 5 S L11 AND (PHOSPHOR? DOPANT?)

=> d ibib L12 abs hitstr 4-5

L12 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2007:172322 CAPLUS Full-text

DOCUMENT NUMBER: 146:239776

TITLE: Organic electroluminescence elements with high  
stability under hot and humid conditions, and light  
sources and displays using them

INVENTOR(S): Sugita, Shuichi; Kita, Hiroshi  
 PATENT ASSIGNEE(S): Konica Minolta Holdings, Inc., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 41pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

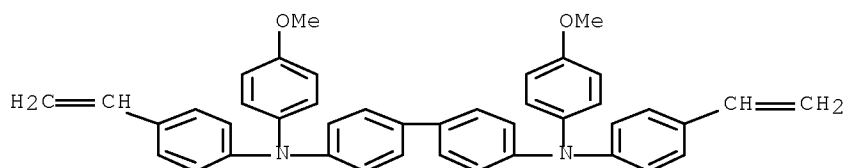
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2007042728	A	20070215	JP 2005-222687	20050801
PRIORITY APPLN. INFO.:			JP 2005-222687	20050801

AB The organic electroluminescent (EL) elements have  $\geq 1$  doped light-emitting organic layers and hole transporting organic layers containing organic compds. with HOMO -5.3 to -4.3 eV and LUMO -1.4 to -0.3 eV, wherein the organic solvent contents of those organic layers are  $1 + 10^{-2}$  to  $1 + 10^3$  ppm. The dopants are preferably phosphorescent substances. The org EL elements are useful for backlights of liquid crystal displays (LCD). The invention provides displays with high brightness and no dark sport nor voltage increase under constant current driving.

IT ~~924298-47-5P~~ ~~924298-48-6P~~  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (hole transporter; organic EL elements with high stability under hot and humid conditions for displays)

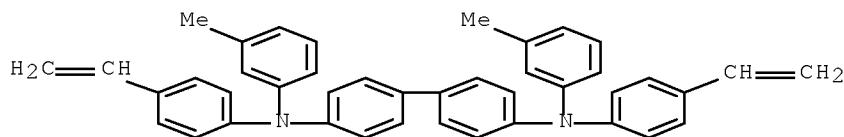
RN 924298-47-5 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'-bis(4-ethenylphenyl)-N4,N4'-bis(4-methoxyphenyl)- (CA INDEX NAME)



RN 924298-48-6 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'-bis(4-ethenylphenyl)-N4,N4'-bis(3-methylphenyl)- (CA INDEX NAME)



TITLE: Organic electroluminescent device for displays and illumination source and its production method  
 INVENTOR(S): Kita, Hiroshi; Yamada, Taketoshi; Suzurizato, Yoshiyuki; Ueda, Noriko  
 PATENT ASSIGNEE(S): Konica Minolta Holdings Inc., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 65 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004185967	A	20040702	JP 2002-351157	20021203
JP 4225043	B2	20090218		

PRIORITY APPLN. INFO.: JP 2002-351157 20021203

AB The invention relates to an organic electroluminescent device comprising a light-emitting layer containing a phosphorescent dopant and a multifunctioning polymer, wherein, at least, the two of functional mol. units selected from a luminescent host unit, a hole transporting unit, and an electron transporting unit constitute the multifunctioning polymer.

IT 714976-00-8

RL: DEV (Device component use); USES (Uses)  
 (organic electroluminescent device having phosphorescent  
 dopant and multifunctioning polymer in light emitting layer)

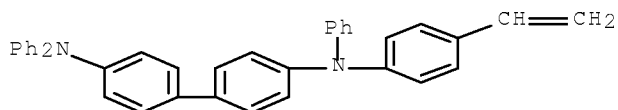
RN 714976-00-8 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-ethenylphenyl)-N,N',N'-triphenyl-,  
 polymer with 9-ethenyl-9H-carbazole (9CI) (CA INDEX NAME)

CM 1

CRN 247132-44-1

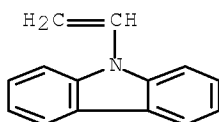
CMF C38 H30 N2



CM 2

CRN 1484-13-5

CMF C14 H11 N



OS.CITING REF COUNT: 9 THERE ARE 9 CAPLUS RECORDS THAT CITE THIS RECORD  
(9 CITINGS)

=> d hist

(FILE 'HOME' ENTERED AT 13:02:47 ON 13 JAN 2011)

FILE 'REGISTRY' ENTERED AT 13:03:13 ON 13 JAN 2011

L1 STRUCTURE UPLOADED  
L2 50 S L1  
L3 25760 S K1 FULL  
L4 1585 S L1 FULL

FILE 'CAPLUS' ENTERED AT 13:04:34 ON 13 JAN 2011

L5 1192 S L4  
L6 396 S L5 AND ELECTROLUMIN?  
L7 15 S L6 AND (PHOSPHOR? DOPANT?)

FILE 'STNGUIDE' ENTERED AT 13:06:11 ON 13 JAN 2011

FILE 'REGISTRY' ENTERED AT 13:07:00 ON 13 JAN 2011

L8 STRUCTURE UPLOADED  
L9 39 S L8  
L10 634 S L8 FULL

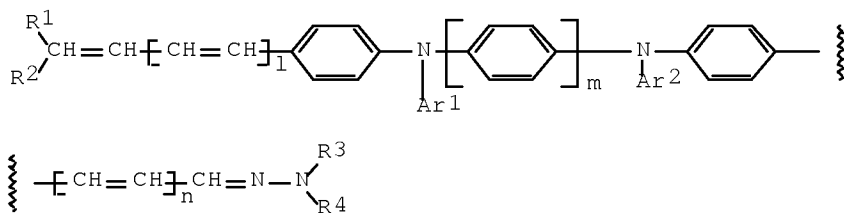
FILE 'CAPLUS' ENTERED AT 13:07:55 ON 13 JAN 2011

L11 455 S L10  
L12 5 S L11 AND (PHOSPHOR? DOPANT?)

=> d ibib L11 abs hitstr 453-455

L11 ANSWER 453 OF 455 CAPLUS COPYRIGHT 2011 ACS on STN  
ACCESSION NUMBER: 1993:682127 CAPLUS Full-text  
DOCUMENT NUMBER: 119:282127  
ORIGINAL REFERENCE NO.: 119:50287a,50290a  
TITLE: Hydrazone compound and electrophotographic  
photoreceptor therefrom  
INVENTOR(S): Sumita, Keisuke; Oki, Tsuneo  
PATENT ASSIGNEE(S): Mita Industrial Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 04328168	A	19921117	JP 1991-97787	19910430
PRIORITY APPLN. INFO.:			JP 1991-97787	19910430
GI				



I

AB A hydrazone compound is represented by I [R1,2 = H, alkyl, aryl, aralkyl, heterocyclyl; R1,2 can not be H simultaneously; R3,4 = alkyl, aryl, aralkyl, heterocyclyl; Ar1,2 = alkyl, aryl, aralkyl; l, n = 0, 1; m = 1, 2, 3; l and n can not be 0 simultaneously]. An electrophotog. photoreceptor contains the hydrazone compound in a photosensitive layer. The hydrazone compound in the electrophotog. photoreceptor gives excellent sensitivity, chargeability, residual potential, and O3 resistance.

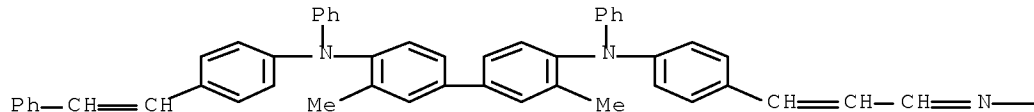
IT 151656-69-8P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation and use of, in electrophotog. photoreceptors)

RN 151656-69-8 CAPLUS

CN 2-Propenal, 3-[4-[[3,3'-dimethyl-4'-[phenyl[4-(2-phenylethenyl)phenyl]amino][1,1'-biphenyl]-4-yl]phenylamino]phenyl]-, 2,2-diphenylhydrazone (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

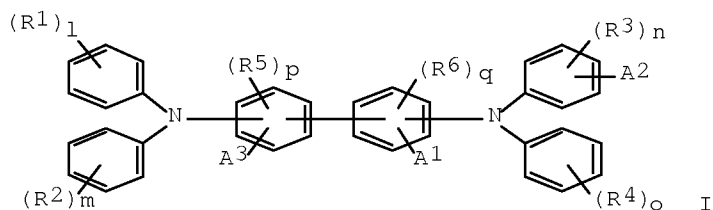
—NPh<sub>2</sub>

L11 ANSWER 454 OF 455 CAPLUS COPYRIGHT 2011 ACS on STN  
 ACCESSION NUMBER: 1993:459651 CAPLUS Full-text  
 DOCUMENT NUMBER: 119:59651  
 ORIGINAL REFERENCE NO.: 119:10563a,10566a  
 TITLE: Benzidine derivative for electrophotographic photoreceptor  
 INVENTOR(S): Hanatani, Yasuyuki; Iwasaki, Hiroaki  
 PATENT ASSIGNEE(S): Mita Industrial Co., Ltd., Japan  
 SOURCE: Eur. Pat. Appl., 26 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent

LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 506492	A2	19920930	EP 1992-302801	19920330
EP 506492	A3	19930303		
EP 506492	B1	19970205		
R: DE, FR, GB, IT, NL				
JP 04300854	A	19921023	JP 1991-66767	19910329
JP 2518974	B2	19960731		
US 5272031	A	19931221	US 1992-856681	19920324
PRIORITY APPLN. INFO.:			JP 1991-66767	A 19910329
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT				
OTHER SOURCE(S): MARPAT 119:59651				

GI



AB A benzidine derivative represented by the formula I (R1-6 = H, halogen, alkyl, alkoxy, aryl, aralkyl, or heterocyclyl; l, m, n, o, p, q = 0, 1 or 2; A1-3 = H or (CH=CH)rCH=CR7R8 where R7,R8 = H, alkyl, alkoxy, aryl, aralkyl, or heterocyclyl, provided that R7 and R8 are not both H; r = 0 or 1 and provided that A1, A2, and A3 are not H simultaneously and that ≥1 of A1 and A3 is H) is used as a charge-transporting agent for an electrophotog. photoreceptor.

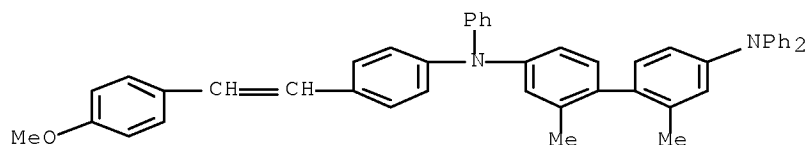
IT 147845-68-9 147845-69-0 147845-70-3  
 147845-71-4

RL: USES (Uses)

(charge-transporting agent, for electrophotog. photoreceptors)

RN 147845-68-9 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4-[2-(4-methoxyphenyl)ethenyl]phenyl]-2,2'-dimethyl-N4,N4',N4'-triphenyl- (CA INDEX NAME)

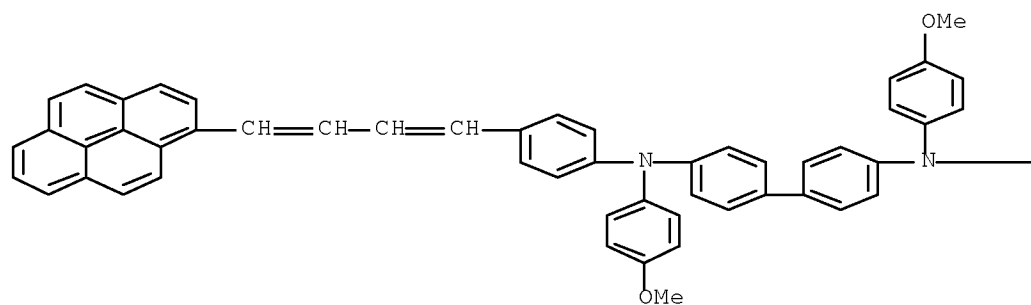


RN 147845-69-0 CAPLUS

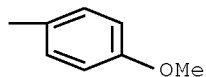
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4',N4'-tris(4-methoxyphenyl)-N4-[4-[4-(1-pyrenyl)-1,3-butadien-1-yl]phenyl]- (CA INDEX NAME)



PAGE 1-A

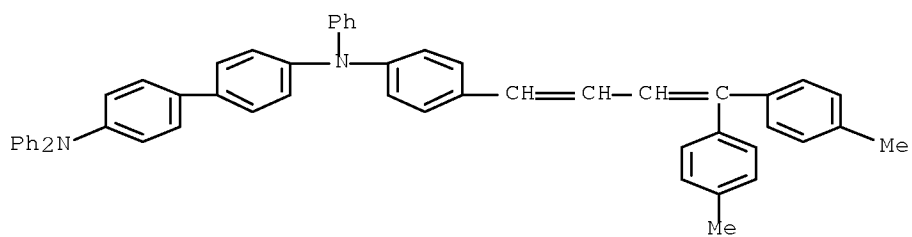


PAGE 1-B



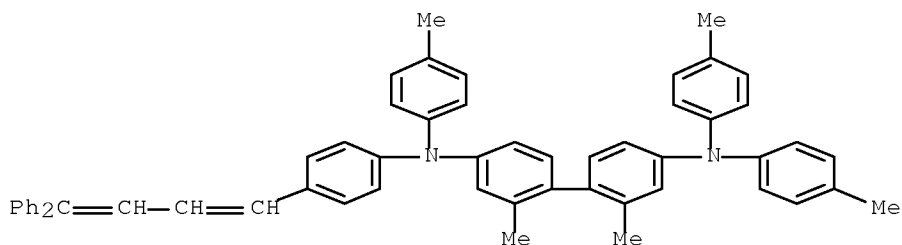
RN 147845-70-3 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4-[4,4-bis(4-methylphenyl)-1,3-butadien-1-yl]phenyl]-N4,N4',N4'-triphenyl- (CA INDEX NAME)



RN 147845-71-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4-(4,4-diphenyl-1,3-butadien-1-yl)phenyl]-2,2'-dimethyl-N4,N4',N4'-tris(4-methylphenyl)- (CA INDEX NAME)



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD  
(2 CITINGS)

L11 ANSWER 455 OF 455 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 1993:90870 CAPLUS Full-text

DOCUMENT NUMBER: 118:90870

ORIGINAL REFERENCE NO.: 118:15755a,15758a

TITLE: Preparation of styryl compounds as charge-transporting agents for photoconductors and electroluminescent devices

INVENTOR(S): Ueda, Hideaki

PATENT ASSIGNEE(S): Minolta Camera Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04290851	A	19921015	JP 1991-52377	19910318
JP 2927017	B2	19990728		

PRIORITY APPLN. INFO.: JP 1991-52377 19910318

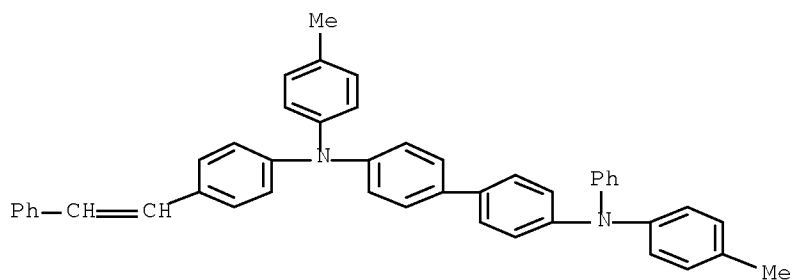
AB A1R1NA2A3NR2A4CH:CA5R3 [R1-2 = (un)substituted alkyl, aralkyl, aryl, heterocyclyl; R3 = H, (un)substituted alkyl, aralkyl, aryl, heterocyclyl, A1 = (un)substituted aryl; A2-4 = (un)substituted arylene; A5 = (un)substituted aryl, heterocyclyl] are claimed. Electrophotog. photoconductors using (I) as charge-transporting agents are excellent in sensitivity, initial surface potential, dark decay, and durability in repeated use.

IT 145772-06-1 145772-07-2 145772-08-3  
145772-09-4 145772-10-7 145772-11-8  
145772-12-9 145772-13-0 145772-14-1  
145772-15-2 145772-16-3 145772-17-4  
145772-21-0 145772-22-1 145772-23-2

RL: TEM (Technical or engineered material use); USES (Uses)  
(electrophotog. photoreceptor charge-transporting agent)

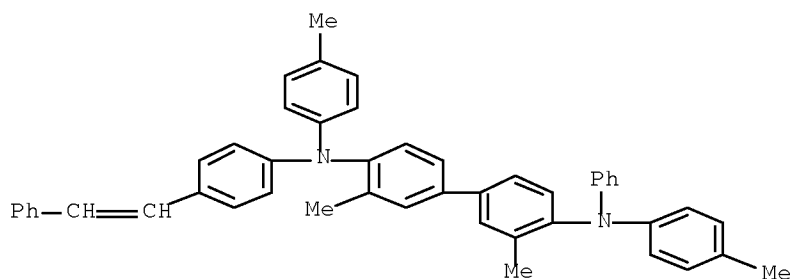
RN 145772-06-1 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'-bis(4-methylphenyl)-N4-phenyl-N4'-[4-(2-phenylethenyl)phenyl]- (CA INDEX NAME)



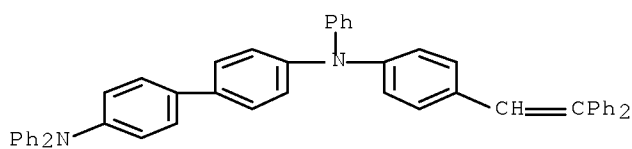
RN 145772-07-2 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl-N4,N4'-bis(4-methylphenyl)-N4-phenyl-N4'-[4-(2-phenylethenyl)phenyl]- (CA INDEX NAME)



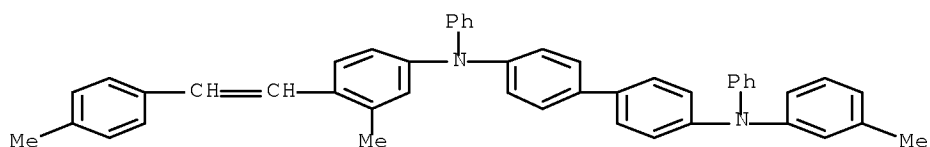
RN 145772-08-3 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4-(2,2-diphenylethenyl)phenyl]-N4,N4',N4'-triphenyl- (CA INDEX NAME)



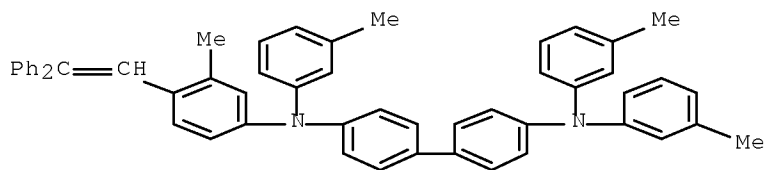
RN 145772-09-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-[3-methyl-4-[2-(4-methylphenyl)ethenyl]phenyl]-N4'-(3-methylphenyl)-N4,N4'-diphenyl- (CA INDEX NAME)



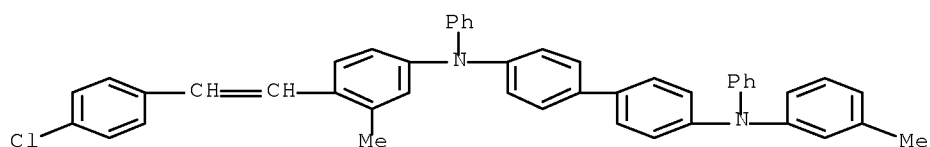
RN 145772-10-7 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4-(2,2-diphenylethenyl)-3-methylphenyl]-N4,N4',N4'-tris(3-methylphenyl)- (CA INDEX NAME)



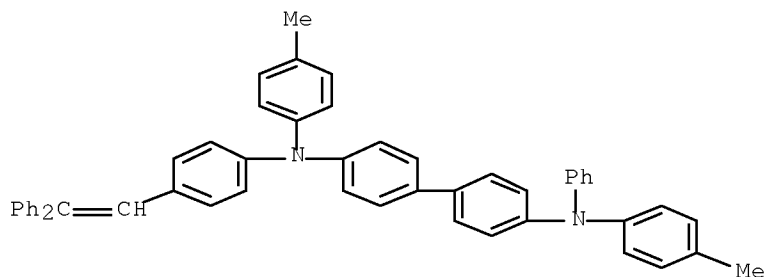
RN 145772-11-8 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4-[2-(4-chlorophenyl)ethenyl]-3-methylphenyl]-N4'-(3-methylphenyl)-N4,N4'-diphenyl- (CA INDEX NAME)



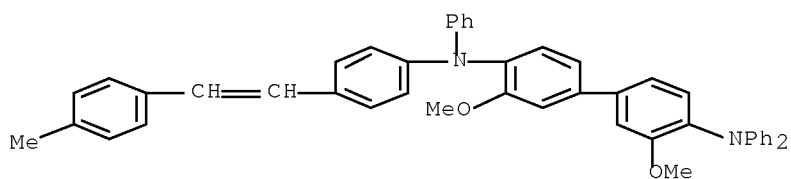
RN 145772-12-9 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4-(2,2-diphenylethenyl)phenyl]-N4,N4'-bis(4-methylphenyl)-N4'-phenyl- (CA INDEX NAME)



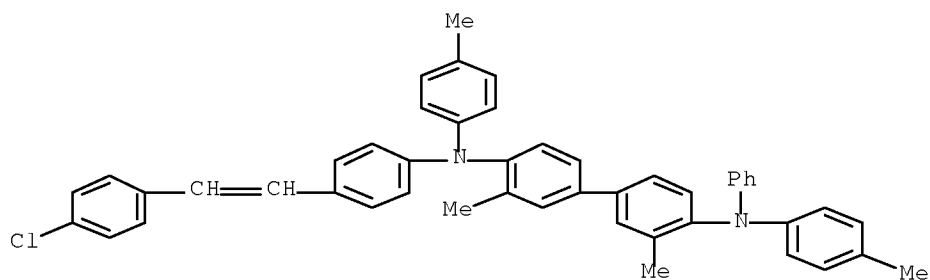
RN 145772-13-0 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethoxy-N-[4-[2-(4-methylphenyl)ethenyl]phenyl]-N,N',N'-triphenyl- (9CI) (CA INDEX NAME)



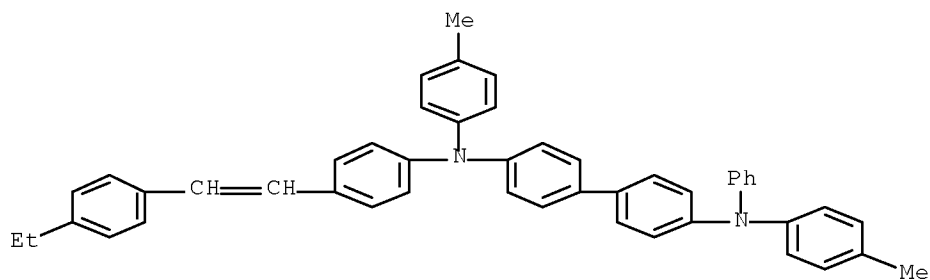
RN 145772-14-1 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4-[2-(4-chlorophenyl)ethenyl]phenyl]-3,3'-dimethyl-N4,N4'-bis(4-methylphenyl)-N4'-phenyl- (CA INDEX NAME)



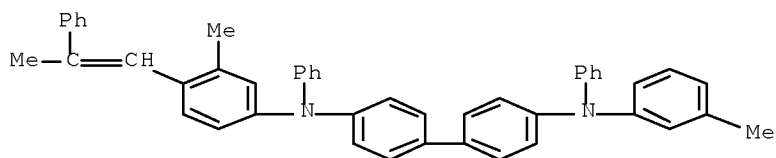
RN 145772-15-2 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4-[2-(4-ethylphenyl)ethenyl]phenyl]-N4,N4'-bis(4-methylphenyl)-N4'-phenyl- (CA INDEX NAME)



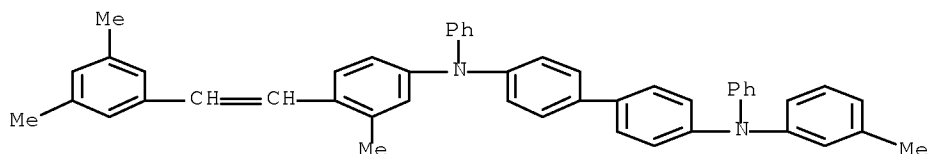
RN 145772-16-3 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-(3-methylphenyl)-N4'-[3-methyl-4-(2-phenyl-1-propen-1-yl)phenyl]-N4,N4'-diphenyl- (CA INDEX NAME)



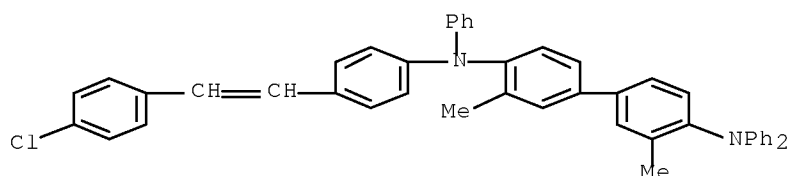
RN 145772-17-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4-[2-(3,5-dimethylphenyl)ethenyl]-3-methylphenyl]-N4'-(3-methylphenyl)-N4,N4'-diphenyl- (CA INDEX NAME)



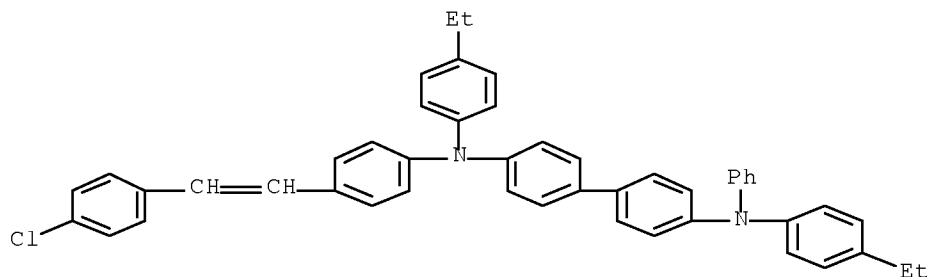
RN 145772-21-0 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4-[2-(4-chlorophenyl)ethenyl]phenyl]-3,3'-dimethyl-N4,N4',N4'-triphenyl- (CA INDEX NAME)



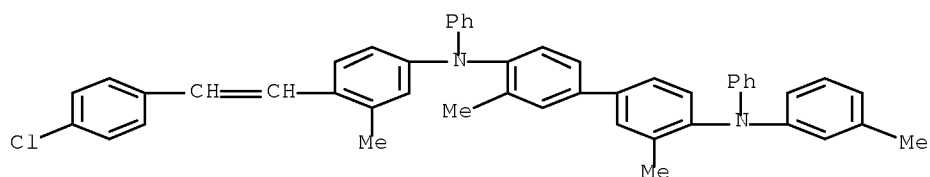
RN 145772-22-1 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4-[2-(4-chlorophenyl)ethenyl]phenyl]-N4,N4'-bis(4-ethylphenyl)-N4'-phenyl- (CA INDEX NAME)

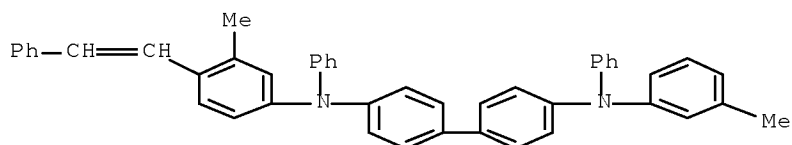


RN 145772-23-2 CAPLUS

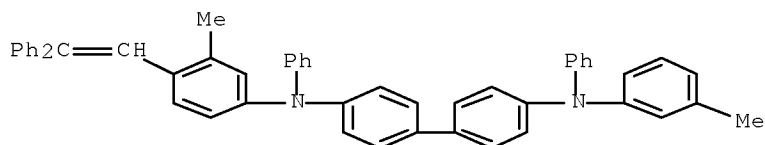
CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4-[2-(4-chlorophenyl)ethenyl]-3-methylphenyl]-3,3'-dimethyl-N4'-(3-methylphenyl)-N4,N4'-diphenyl- (CA INDEX NAME)



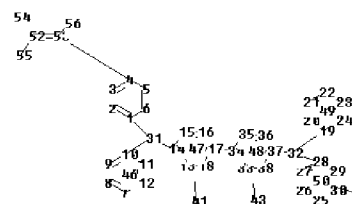
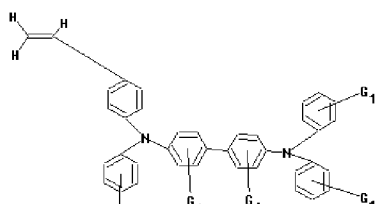
IT 145772-04-9P 145772-05-0P  
 RL: PREP (Preparation)  
 (preparation of, as electrophotog. photoreceptor charge-transporting agent)  
 RN 145772-04-9 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N4-(3-methylphenyl)-N4'-[3-methyl-4-(2-phenylethenyl)phenyl]-N4,N4'-diphenyl- (CA INDEX NAME)



RN 145772-05-0 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4-(2,2-diphenylethenyl)-3-methylphenyl]-N4'-(3-methylphenyl)-N4,N4'-diphenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)



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ring nodes :
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24 25 26 27 28 29 30 33 34 35 36 37 38
chain bonds :
1-31 4-53 10-31 14-31 17-34 19-32 28-32 32-37 52-53 52-54 52-55 53-56

ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-
15
15-16 16-17 17-18 19-20 19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27
27-28 28-29
29-30 33-34 33-38 34-35 35-36 36-37 37-38
exact/norm bonds :
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exact bonds :
4-53 17-34 52-53 52-54 52-55 53-56
normalized bonds :
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15-16 16-17 17-18 19-20 19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27
27-28 28-29
29-30 33-34 33-38 34-35 35-36 36-37 37-38
isolated ring systems :
containing 1 : 7 : 13 : 19 : 25 : 33 :

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G1:H,CH3,Ak

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Match level :
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11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom
20:Atom 21:Atom
22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom
31:CLASS 32:CLASS
33:Atom 34:Atom 35:Atom 36:Atom 37:Atom 38:Atom 40:CLASS 41:CLASS 43:CLASS
44:CLASS 45:CLASS
46:Atom 47:Atom 48:Atom 49:Atom 50:Atom 52:CLASS 53:CLASS 54:CLASS 55:CLASS
56:CLASS

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L13 STRUCTURE UPLOADED

=> s l13

SAMPLE SEARCH INITIATED 13:11:56 FILE 'REGISTRY'  
SAMPLE SCREEN SEARCH COMPLETED - 922 TO ITERATE

100.0% PROCESSED 922 ITERATIONS 16 ANSWERS  
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\*  
PROJECTED ITERATIONS: 16619 TO 20261  
PROJECTED ANSWERS: 80 TO 560



L14 16 SEA SSS SAM L13

=> s 13 full

L15 860691 13

=> s L13 full

FULL SEARCH INITIATED 13:12:49 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 17641 TO ITERATE

100.0% PROCESSED 17641 ITERATIONS

253 ANSWERS

SEARCH TIME: 00.00.01

L16 253 SEA SSS FUL L13

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s l16

L17 144 L16

=> d ibib abs hitstr 142-144

L17 ANSWER 142 OF 144 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 1999:237536 CAPLUS Full-text

DOCUMENT NUMBER: 131:45647

TITLE: Synthesis of high-Tg hole-transporting polymers with different redox potentials and their performance in organic two-layer LEDs

AUTHOR(S): Bellmann, Erika; Shaheen, Sean E.; Marder, Seth R.; Kippelen, Bernard; Grubbs, Robert H.; Peyghambarian, Nasser

CORPORATE SOURCE: Arnold and Mabel Beckman Laboratories of Chemical Synthesis, Division of Chemistry and Chemical Engineering, California Institute of Technology, Pasadena, CA, 91125, USA

SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (1998), 3476(Organic Light-Emitting Materials and Devices II), 322-331  
CODEN: PSISDG; ISSN: 0277-786X

PUBLISHER: SPIE-The International Society for Optical Engineering

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Organic hole transport materials are used in organic LEDs, where they substantially improve device performance if placed as a hole transport layer (HTL) between the anode and the electroluminescent layer (EL). Soluble polymeric hole transport materials with high glass transition temps. are of particular interest, because they allow for efficient device fabrication through spin casting of the HTL, and high glass transition temps. have been found to improve thermal and long-term stability of the device. The redox potential of the hole transport material detcs. the facility of charge injection at the anode/HTL and the HTL/EL interfaces, thus affecting the overall device efficiency. We have synthesized a series of soluble hole-transporting polymers with glass transition temps. in the range of 130°C to 150°C. The synthetic method allows facile substitution of the hole transport functionality with electron-withdrawing and electron-donating groups, which permits tuning of the redox potential of the polymer. These polymers have been used as HTL in two-layer devices ITO/HTL/Alq/Mg. The maximum external quantum efficiency increases, if the redox potential is changed to facilitate reduction of the hole transport material at the HTL/EL interface. Electron-

deficient derivs. show higher external quantum efficiencies. The device stability, however, follows the opposite trend.

IT 220716-65-4P 220716-67-6P 220716-69-8P  
227176-03-6P

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(synthesis and characterization of high-glass-temperature hole-transporting polymers with different redox potentials and performance in organic two-layer LEDs)

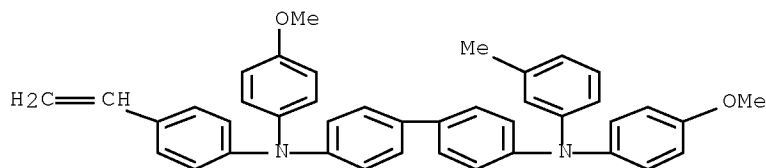
RN 220716-65-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-ethenylphenyl)-N,N'-bis(4-methoxyphenyl)-N'-(3-methylphenyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 220716-60-9

CMF C41 H36 N2 O2



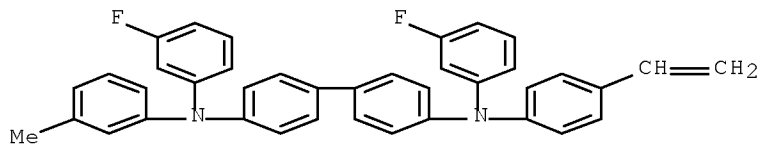
RN 220716-67-6 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-ethenylphenyl)-N,N'-bis(3-fluorophenyl)-N'-(3-methylphenyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 220716-62-1

CMF C39 H30 F2 N2



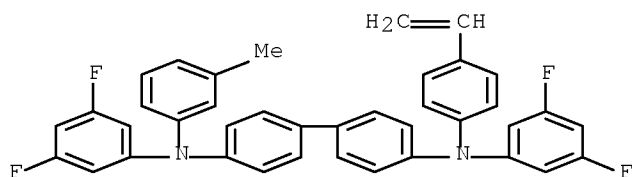
RN 220716-69-8 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3,5-difluorophenyl)-N-(4-ethenylphenyl)-N'-(3-methylphenyl)-, homopolymer (9CI) (CA INDEX NAME)

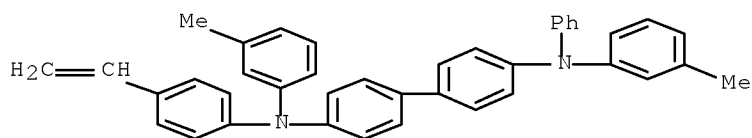
CM 1

CRN 220716-64-3

CMF C39 H28 F4 N2



RN 227176-03-6 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N4-(4-ethenylphenyl)-N4,N4'-bis(3-methylphenyl)-N4'-phenyl-, homopolymer (CA INDEX NAME)  
 CM 1  
 CRN 227176-02-5  
 CMF C40 H34 N2



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)  
 REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 143 OF 144 CAPLUS COPYRIGHT 2011 ACS on STN  
 ACCESSION NUMBER: 1999:175849 CAPLUS Full-text  
 DOCUMENT NUMBER: 130:198789  
 TITLE: Photoelectric conversion device and solar cell with dye-sensitized nanoparticulate semiconductor and organic hole transporting agent  
 INVENTOR(S): Shiratsuchi, Kentaro; Takizawa, Hiroo  
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
 SOURCE: Eur. Pat. Appl., 27 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 901175	A2	19990310	EP 1998-116815	19980904
EP 901175	A3	19990901		
EP 901175	B1	20020807		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 11144773	A	19990528	JP 1998-186935	19980617
US 6084176	A	20000704	US 1998-145268	19980902
AT 222028	T	20020815	AT 1998-116815	19980904

PRIORITY APPLN. INFO.:

JP 1997-257535

A 19970905

JP 1998-186935

A 19980617

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB A photoelec. conversion device has a layer of dye-sensitized nanoparticulate semiconductor and a hole transporting layer containing an organic hole transporting agent. The dye-sensitized photoelec. conversion device is fully durable. A solar cell comprising the photoelec. conversion device is also provided.

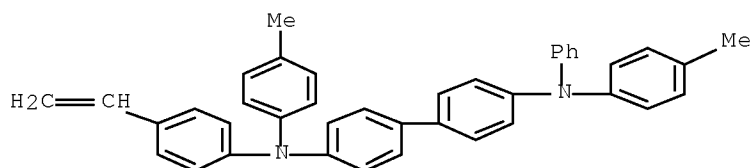
IT 220859-80-3 220859-81-4

RL: DEV (Device component use); USES (Uses)

(photoelec. cell and solar cell with dye-sensitized nanoparticulate semiconductor and organic hole transporting agent)

RN 220859-80-3 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-(4-ethenylphenyl)-N4,N4'-bis(4-methylphenyl)-N4'-phenyl- (CA INDEX NAME)



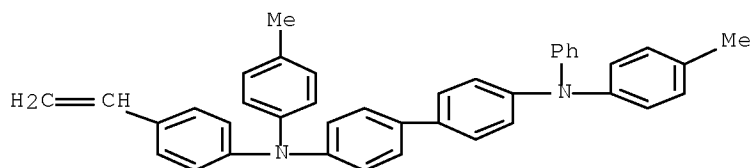
RN 220859-81-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-(4-ethenylphenyl)-N4,N4'-bis(4-methylphenyl)-N4'-phenyl-, homopolymer (CA INDEX NAME)

CM 1

CRN 220859-80-3

CMF C40 H34 N2



OS.CITING REF COUNT: 22 THERE ARE 22 CAPLUS RECORDS THAT CITE THIS RECORD (34 CITINGS)

L17 ANSWER 144 OF 144 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 1999:46614 CAPLUS Full-text

DOCUMENT NUMBER: 130:202399

TITLE: Organic two-layer light-emitting diodes based on high-Tg hole-transporting polymers with different redox potentials

AUTHOR(S): Bellmann, Erika; Shaheen, Sean E.; Grubbs, Robert H.; Marder, Seth R.; Kippelen, Bernard; Peyghambarian, Nasser

CORPORATE SOURCE: Arnold and Mabel Beckman Laboratories of Chemical  
Synthesis Division of Chemistry and Chemical  
Engineering, California Institute of Technology,  
Pasadena, CA, 91125, USA  
SOURCE: Chemistry of Materials (1999), 11(2), 399-407  
CODEN: CMATEX; ISSN: 0897-4756  
PUBLISHER: American Chemical Society  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Soluble arylamine-based hole-transporting polymers with glass transition  
temps. at 130-150° were synthesized. The synthetic methodol. allows facile  
substitution of the aryl groups on the amine with electron-withdrawing and  
electron-donating moieties, which permits tuning of the redox potential of the  
polymer. These polymers were used as hole-transport layers (HTLs) in two-  
layer light-emitting diodes ITO/HTL/Alq/Mg [ITO = indium tin oxide, Alq =  
tris(8-quinolinato)aluminum]. The maximum external quantum efficiency of the  
device increases if the redox potential of the HTL is increased to facilitate  
reduction of the pos. charge carriers at the HTL/Alq interface. A fluorinated  
hole-transport polymer with a relatively large redox potential (390 mV vs.  
ferrocenium/ferrocene) yielded the device with the highest external quantum  
efficiency of 1.25% photons per electron. The device stability, however,  
follows the opposite trend. The device with the most electron-rich HTL  
exhibited the best performance after prolonged usage.

IT 220716-65-4P 220716-66-5P 220716-67-6P  
220716-69-8P

RL: DEV (Device component use); PEP (Physical, engineering or chemical  
process); PRP (Properties); SPN (Synthetic preparation); PREP  
(Preparation); PROC (Process); USES (Uses)  
(hole-transporting layer in light emitting diode, and device lifetime  
and quantum efficiency related to redox potential)

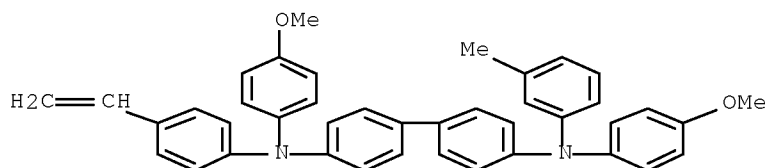
RN 220716-65-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-ethenylphenyl)-N,N'-bis(4-  
methoxyphenyl)-N'-(3-methylphenyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 220716-60-9

CMF C41 H36 N2 O2



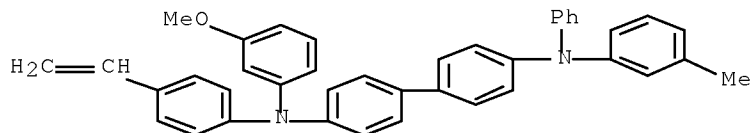
RN 220716-66-5 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-ethenylphenyl)-N-(3-methoxyphenyl)-N'-  
(3-methylphenyl)-N'-phenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 220716-61-0

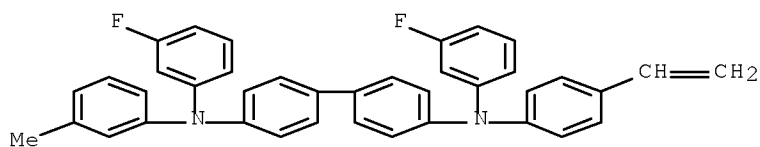
CMF C40 H34 N2 O



RN 220716-67-6 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-ethenylphenyl)-N,N'-bis(3-fluorophenyl)-N'-(3-methylphenyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

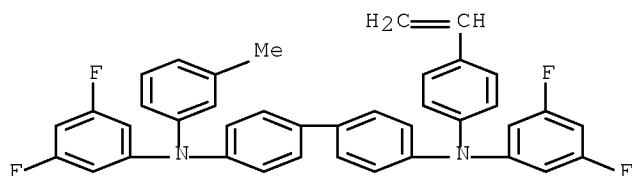
CRN 220716-62-1  
 CMF C39 H30 F2 N2



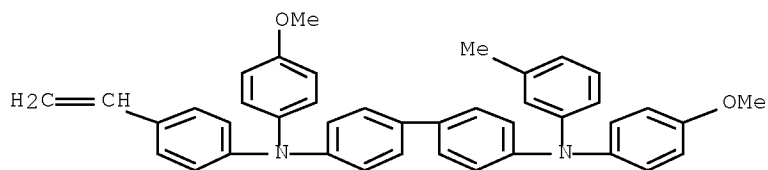
RN 220716-69-8 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3,5-difluorophenyl)-N-(4-ethenylphenyl)-N'-(3-methylphenyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 220716-64-3  
 CMF C39 H28 F4 N2

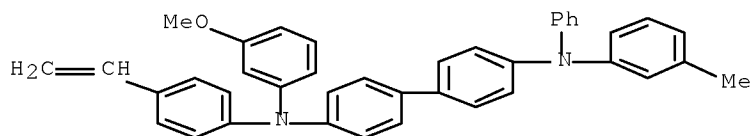


IT 220716-60-9P 220716-61-0P 220716-62-1P  
 220716-64-3P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation of hole-transporting polymers using)  
 RN 220716-60-9 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N4-(4-ethenylphenyl)-N4,N4'-bis(4-methoxyphenyl)-N4'-(3-methylphenyl)- (CA INDEX NAME)



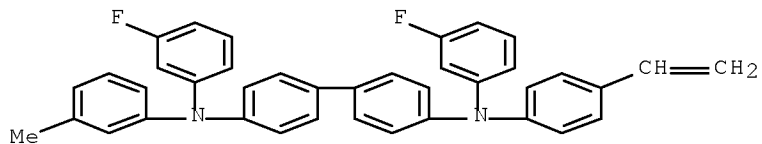
RN 220716-61-0 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-(4-ethenylphenyl)-N4-(3-methoxyphenyl)-  
N4'-(3-methylphenyl)-N4'-phenyl- (CA INDEX NAME)



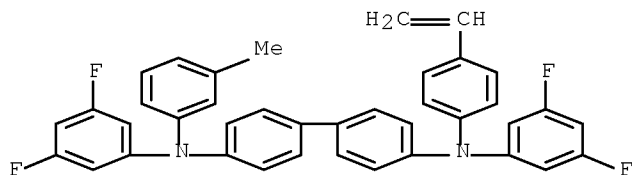
RN 220716-62-1 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-(4-ethenylphenyl)-N4,N4'-bis(3-  
fluorophenyl)-N4'-(3-methylphenyl)- (CA INDEX NAME)



RN 220716-64-3 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'-bis(3,5-difluorophenyl)-N4-(4-  
ethenylphenyl)-N4'-(3-methylphenyl)- (CA INDEX NAME)



OS.CITING REF COUNT: 99 THERE ARE 99 CAPLUS RECORDS THAT CITE THIS  
RECORD (99 CITINGS)  
REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d ibib abs hitstr 131-141

L17 ANSWER 131 OF 144 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2001:114877 CAPLUS Full-text

DOCUMENT NUMBER: 134:155217

TITLE: Electrophotographic photosensitive member, process cartridge, and electrophotographic apparatus

INVENTOR(S): Tanaka, Takakazu; Nakajima, Yuka

PATENT ASSIGNEE(S): Canon K. K., Japan

SOURCE: Eur. Pat. Appl., 34 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1076265	A1	20010214	EP 2000-117186	20000810
EP 1076265	B1	20091111		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
US 6410195	B1	20020625	US 2000-633870	20000807
JP 2001117250	A	20010427	JP 2000-242839	20000810
JP 3897522	B2	20070328		

PRIORITY APPLN. INFO.: JP 1999-228773 A 19990812

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB An electrophotog. photosensitive member comprises a support and a photosensitive layer provided thereon. The photosensitive layer fulfilling at least one of the following conditions (A) and (B): (A) containing a polymerization product of a monomer having a reactive group represented by formula (1)  $-O-(-CH_2-)_n-CH=CH-R_0$  ( $R_0 = H$  or  $Me$ ;  $n = 0-1$ , provided that  $R_0 = Me$  when  $n = 0$ ), and (B) containing a copolymn. product of a monomer having a reactive group represented by formula (2)  $-O-CH=CH_2$  with a charge-transporting material having a reactive group capable of reacting with the monomer.

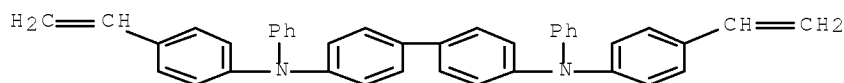
IT ~~241476-68-6~~

RL: TEM (Technical or engineered material use); USES (Uses)

(charge transporting material in electrophotog. photosensitive member)

RN 241476-68-6 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'-bis(4-ethenylphenyl)-N4,N4'-diphenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 132 OF 144 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2001:78030 CAPLUS Full-text

DOCUMENT NUMBER: 134:131971

TITLE: Curable silicon-containing aromatic polymer



composition  
 INVENTOR(S): Kobayashi, Hideki; Masatomi, Toru  
 PATENT ASSIGNEE(S): Dow Corning Toray Silicone Co., Ltd., Japan  
 SOURCE: Eur. Pat. Appl., 26 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1072628	A2	20010131	EP 2000-306393	20000727
EP 1072628	A3	20011212		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2001040216	A	20010213	JP 1999-214796	19990729
PRIORITY APPLN. INFO.:			JP 1999-214796	A 19990729

AB A curable silicon-containing aromatic polymer composition is disclosed containing a silicon-containing aromatic polymer whose main chain incorporates a charge-transporting group. The curable silicon-containing aromatic polymer composition comprises (A) 100 weight parts silicon-containing aromatic polymer having a silicon-bonded hydrolyzable group at both mol. chain terminals and a main chain as defined by units of the general formula wherein A denotes a divalent organic group that contains at least 1 nitrogen atom and at least 3 six-membered aromatic rings, B denotes a C2 to C6 alkylene group, R1 denotes unsubstituted or halogen-substituted C1 to C10 monovalent hydrocarbon groups that lack aliphatic unsatn., R2 is an alkyleneoxyalkylene group or an unsubstituted or alkoxy-substituted C2 to C10 divalent hydrocarbon group, the subscript x is an integer with a value of at least 1, the subscripts y and z are each integers with a value of at least 0, and (y & z) is at least 2, (B) 1 to 90 weight parts of an organosilane having the general formula  $R_fSiX_{4-f}$ , or the partial hydrolysis condensates thereof, where R denotes unsubstituted or halogen-substituted monovalent hydrocarbon groups, X denotes hydrolyzable groups, f is an integer from 0 to 2, and (C) a cure-promoting catalyst in sufficient quantity to induce the cure of the silicon-containing aromatic polymer composition. The composition of this invention cure to form a high-hardness coating that has excellent water repellency and solvent resistance. This invention further teaches a method of making curable silicon-containing aromatic polymer compns. The present invention also relates to the cured film compns. prepared from the curable silicon containing aromatic polymer compns., and substrates coated there from.

IT 315673-57-5DP, vinyltrimethoxysilane-terminated  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (curable silicon-containing aromatic polymer composition)

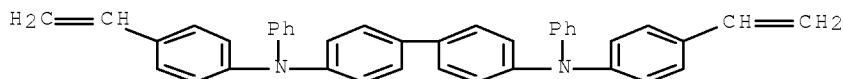
RN 315673-57-5 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(4-ethenylphenyl)-N,N'-diphenyl-, polymer with 1,4-phenylenebis(dimethylsilane) (9CI) (CA INDEX NAME)

CM 1

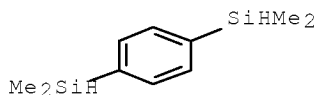
CRN 241476-68-6

CMF C40 H32 N2



CM 2

CRN 2488-01-9  
CMF C10 H18 Si2



REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 133 OF 144 CAPLUS COPYRIGHT 2011 ACS on STN  
ACCESSION NUMBER: 2001:10679 CAPLUS Full-text  
DOCUMENT NUMBER: 134:72061  
TITLE: Silicon-containing aromatic polymers and method for synthesis thereof  
INVENTOR(S): Kobayashi, Hideki; Masatomi, Toru  
PATENT ASSIGNEE(S): Dow Corning Toray Silicone Co., Ltd., Japan  
SOURCE: Eur. Pat. Appl., 31 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1065235	A2	20010103	EP 2000-305516	20000630
EP 1065235	A3	20020206		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2001011188	A	20010116	JP 1999-184763	19990630
PRIORITY APPLN. INFO.:			JP 1999-184763	A 19990630

AB The polymers have weight-average mol. weight  $\leq 1,000,000$  and a main chain built up from silicon and an organic group containing  $\geq 1$  N atom and  $\geq 3$  6-membered aromatic rings. The polymers contain charge-transporting groups. Thus, polymerizing 4 mmol 1,4-bis(dimethylsilyl)benzene with 4 mmol (H2:CH-p-C6H4NPh-C6H4-p-)2 in the presence of Pt-divinyltetramethyldisiloxane complex in PhMe gave a polymer with 94% yield.

IT ~~315673-57-5F~~  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(preparation of silicone aromatic polymers containing charge-transporting groups)

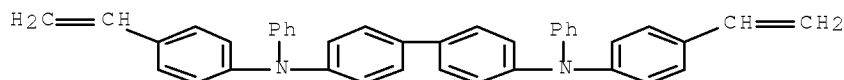
RN 315673-57-5 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(4-ethenylphenyl)-N,N'-diphenyl-, polymer with 1,4-phenylenebis(dimethylsilane] (9CI) (CA INDEX NAME)

CM 1

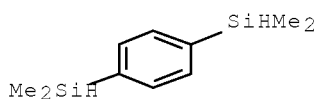
CRN 241476-68-6

CMF C40 H32 N2



CM 2

CRN 2488-01-9  
CMF C10 H18 Si2



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD  
(1 CITINGS)  
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 134 OF 144 CAPLUS COPYRIGHT 2011 ACS on STN  
ACCESSION NUMBER: 2000:824570 CAPLUS Full-text  
DOCUMENT NUMBER: 134:12417  
TITLE: Conducting polymers from polyvinylquinoxalines for  
semiconductor devices  
INVENTOR(S): Sage, Ian Charles; Wood, Emma Louise; Till, Stephen  
John; Feast, William James; Peace, Richard John  
PATENT ASSIGNEE(S): The Secretary of State for Defence, UK  
SOURCE: PCT Int. Appl., 34 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
WO 2000070692	A1	20001123	WO 2000-GB1692	20000503
W: CN, GB, JP, KR, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 1186067	A1	20020313	EP 2000-929670	20000503
EP 1186067	B1	20051005		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2003500838	T	20030107	JP 2000-619041	20000503
US 6716371	B1	20040406	US 2001-959617	20011106
PRIORITY APPLN. INFO.:			GB 1999-10964	A 19990512
			WO 2000-GB1692	W 20000503

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB This invention relates to an organic semiconductor device comprising a substrate bearing an organic layer sandwiched between electrode structures wherein the organic layer comprises a polymer of general Formula  $-(CH_2CXY)_m-$ : wherein X is selected from H, CN, F, Cl, Br, COOCH<sub>3</sub>. Y is given by pyrimidine, pyridazine and pyridine derivs.; m = 5-20,000.

IT 227176-03-6 247132-45-2

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(conducting polymers from polyvinylquinoxalines for semiconductor devices)

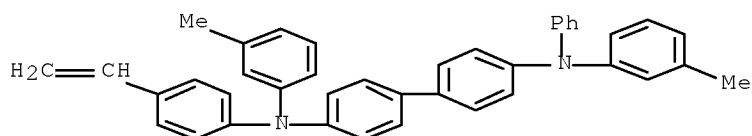
RN 227176-03-6 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-(4-ethenylphenyl)-N4,N4'-bis(3-methylphenyl)-N4'-phenyl-, homopolymer (CA INDEX NAME)

CM 1

CRN 227176-02-5

CMF C40 H34 N2



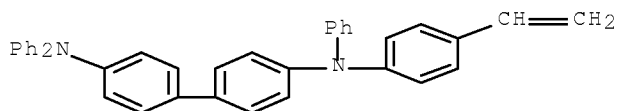
RN 247132-45-2 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-ethenylphenyl)-N,N',N'-triphenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 247132-44-1

CMF C38 H30 N2



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 135 OF 144 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2000:236465 CAPLUS Full-text

DOCUMENT NUMBER: 133:18401

TITLE: Hole Transport Polymers with Improved Interfacial Contact to the Anode Material

AUTHOR(S): Bellmann, Erika; Jabbour, Ghassan E.; Grubbs, Robert H.; Peyghambarian, Nasser

CORPORATE SOURCE: Arnold and Mabel Beckman Laboratories of Chemical  
Synthesis Division of Chemistry and Chemical  
Engineering, California Institute of Technology,  
Pasadena, CA, 91125, USA

SOURCE: Chemistry of Materials (2000), 12(5), 1349-1353  
CODEN: CMATEX; ISSN: 0897-4756

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB New hole transport polymers have been prepared through copolymn. of a  
fluorinated tri-Ph diamine derivative and trimethoxyvinylsilane. The  
modification with trimethoxysilane groups has resulted in materials which can  
be crosslinked through hydrolysis and are capable of forming covalent chemical  
bonds to oxidic surfaces. Organic light-emitting diodes containing these  
polymers show decreased operating voltages and enhanced operational stability  
due to improved interfacial contact between the hole transport layer and the  
anode.

IT 271770-33-3DP, hydrolyzed, reaction products with glass surface  
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or  
engineered material use); PREP (Preparation); USES (Uses)

(preparation and properties hole transport polymers with improved  
interfacial contact to anode material)

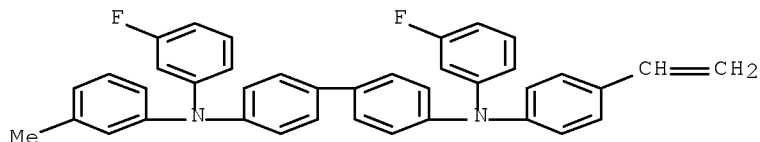
RN 271770-33-3 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-ethenylphenyl)-N,N'-bis(3-fluorophenyl)-  
N'-(3-methylphenyl)-, polymer with ethenyltrimethoxysilane (9CI) (CA  
INDEX NAME)

CM 1

CRN 220716-62-1

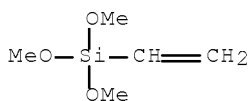
CMF C39 H30 F2 N2



CM 2

CRN 2768-02-7

CMF C5 H12 O3 Si



OS.CITING REF COUNT: 18 THERE ARE 18 CAPLUS RECORDS THAT CITE THIS  
RECORD (18 CITINGS)

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 136 OF 144 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 2000:80702 CAPLUS Full-text

DOCUMENT NUMBER: 132:200814

TITLE: High Tg hole transport polymers for the fabrication of bright and efficient organic light-emitting devices with an air-stable cathode

AUTHOR(S): Jabbour, G. E.; Shaheen, S. E.; Morrell, M. M.; Anderson, J. D.; Lee, P.; Thayumanavan, S.; Barlow, S.; Bellmann, E.; Grubbs, R. H.; Kippelen, B.; Marder, S.; Armstrong, N. R.; Peyghambarian, N.

CORPORATE SOURCE: Optical Sciences Center, University of Arizona, Tucson, AZ, 85721, USA

SOURCE: IEEE Journal of Quantum Electronics (2000), 36(1), 12-17

CODEN: IEJQA7; ISSN: 0018-9197

PUBLISHER: Institute of Electrical and Electronics Engineers

DOCUMENT TYPE: Journal

LANGUAGE: English

AB An organic electroluminescent device with a luminous efficiency of 20 lm/W, at 14 cd/m<sup>2</sup>, and an external quantum efficiency of 4.6% was fabricated using a high Tg hole transport polymer, a small mol. emission layer, and a LiF/Al cathode. The device quantum efficiency can be increased by tuning the ionization potential of the hole-transport moieties. When tested under pulsed voltage mode, in air at room temperature, and without any encapsulation, the device showed a high peak brightness of 4.4 × 10<sup>6</sup> cd/m<sup>2</sup> at 100 A/cm<sup>2</sup> and an efficiency of 4.4 cd/A.

IT 220716-65-4 220716-67-6 236389-09-6

RL: DEV (Device component use); PRP (Properties); USES (Uses)

(hole transport layer; high Tg hole transport polymers for fabrication of bright and efficient organic light-emitting devices with air-stable cathode)

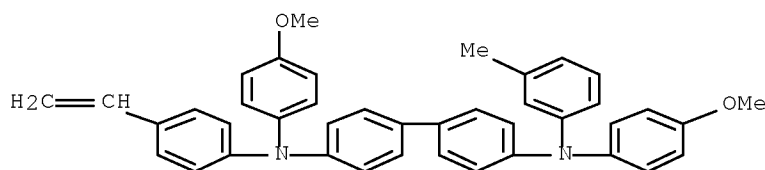
RN 220716-65-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-ethenylphenyl)-N,N'-bis(4-methoxyphenyl)-N'-(3-methylphenyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 220716-60-9

CMF C41 H36 N2 O2

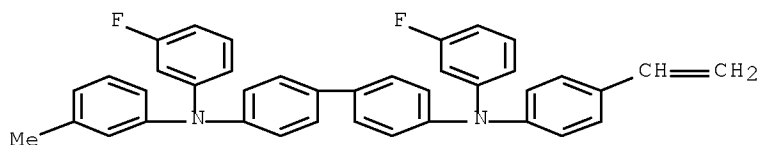


RN 220716-67-6 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-ethenylphenyl)-N,N'-bis(3-fluorophenyl)-N'-(3-methylphenyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

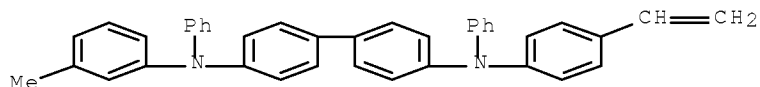
CRN 220716-62-1  
CMF C39 H30 F2 N2



RN 236389-09-6 CAPLUS  
CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-ethenylphenyl)-N'-(3-methylphenyl)-N,N'-diphenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

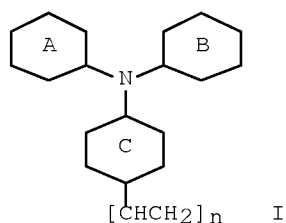
CRN 236389-08-5  
CMF C39 H32 N2



OS.CITING REF COUNT: 12 THERE ARE 12 CAPLUS RECORDS THAT CITE THIS RECORD (12 CITINGS)  
REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 137 OF 144 CAPLUS COPYRIGHT 2011 ACS on STN  
ACCESSION NUMBER: 1999:815169 CAPLUS [Full-text](#)  
DOCUMENT NUMBER: 132:23286  
TITLE: Conducting polymers for semiconductor devices  
INVENTOR(S): Sage, Ian Charles; Wood, Emma Louise; Feast, William James; Peace, Richard John  
PATENT ASSIGNEE(S): Secretary of State for Defence, UK  
SOURCE: Brit. UK Pat. Appl., 24 pp.  
CODEN: BAXXDU  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2334959	A	19990908	GB 1998-4822	19980305
PRIORITY APPLN. INFO.: GI			GB 1998-4822	19980305



AB Polymers of formula I are provided which are incorporated in organic compns. for use as elec. and electronically active materials used in semiconductor devices such as organic light emitting diodes and photorefractive devices, wherein A, B, and C are independently selected from Ph and C1-8 alkyl, C1-8 alkoxy, or C1-8 dialkylamino-substituted Ph, n = 3-10,000. Thus poly(4-vinyltriphenylamine) was prepared by acylation of triphenylamine with acetyl chloride to give 4-acyltriphenylamine, followed by treating of 4-acyltriphenylamine with triisopropoxy aluminum to give monomer 4-vinyltriphenylamine, then purifying and free radical polymerization of the monomer, showing number average mol. weight 5460, weight average mol. weight 9940, and polydispersity index 1.82.

IT 227176-03-6P 247132-45-2P

RL: IMF (Industrial manufacture); PREP (Preparation)  
(preparation of conducting polymers for semiconductor devices)

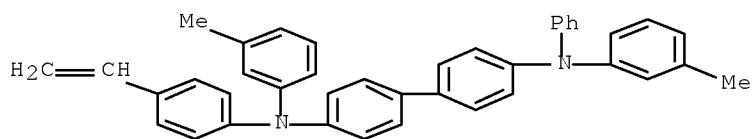
RN 227176-03-6 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-(4-ethenylphenyl)-N4,N4'-bis(3-methylphenyl)-N4'-phenyl-, homopolymer (CA INDEX NAME)

CM 1

CRN 227176-02-5

CMF C40 H34 N2



RN 247132-45-2 CAPLUS

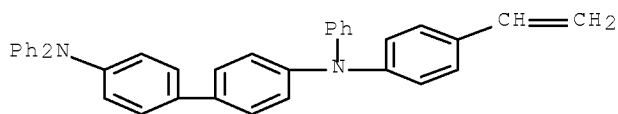
CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-ethenylphenyl)-N,N',N'-triphenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 247132-44-1

CMF C38 H30 N2



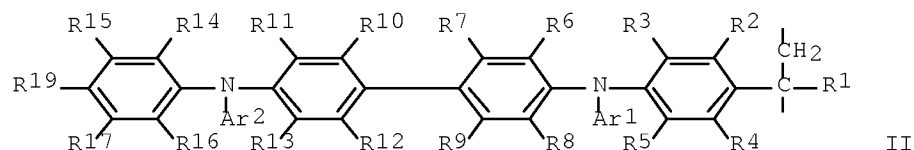
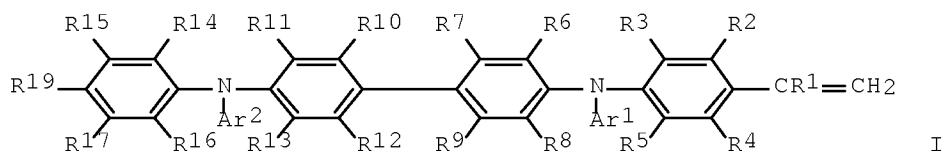


OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD  
(3 CITINGS)

L17 ANSWER 138 OF 144 CAPLUS COPYRIGHT 2011 ACS on STN  
 ACCESSION NUMBER: 1999:683198 CAPLUS Full-text  
 DOCUMENT NUMBER: 131:305225  
 TITLE: Organic electroluminescent element using arylamine vinyl polymer  
 INVENTOR(S): Kido, Junji  
 PATENT ASSIGNEE(S): Chemipro Kasei K. K., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11292829	A	19991026	JP 1998-117841	19980413
JP 4004635	B2	20071107		
PRIORITY APPLN. INFO.:			JP 1998-117841	19980413
OTHER SOURCE(S):	MARPAT 131:305225			

GI



AB Arylamine-containing vinyl monomer I and arylamine-containing vinyl polymer having repeating unit II [R1-18 = H, alkyl, amino, alkoxy, (substituted) aryl; Ar1-2 = (substituted) aryl] and number average mol. weight 1000-1,000,000 are claimed. The electroluminescent element using the arylamine-containing vinyl polymer is also claimed. The element shows good storage stability and high luminous efficiency and luminance.

IT 247132-45-2F

RL: DEV (Device component use); SPN (Synthetic preparation); PREP

(Preparation); USES (Uses)

(organic electroluminescent element using arylamine vinyl polymer)

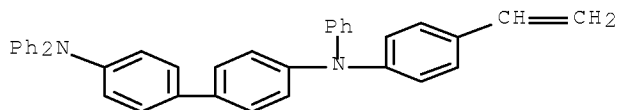
RN 247132-45-2 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-ethenylphenyl)-N,N',N'-triphenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 247132-44-1

CMF C38 H30 N2



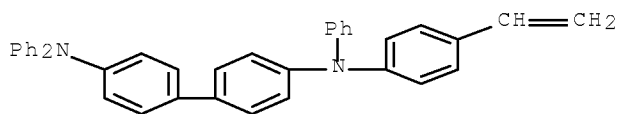
IT 247132-44-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(polymerization of; preparation of arylamine vinyl polymer)

RN 247132-44-1 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-(4-ethenylphenyl)-N4,N4',N4'-triphenyl- (CA INDEX NAME)



L17 ANSWER 139 OF 144 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 1999:572047 CAPLUS [Full-text](#)

DOCUMENT NUMBER: 131:199827

TITLE: Preparation of triarylamines having hydrocarbyloxysilyl-groups as materials for electrophotographic photoconductors

INVENTOR(S): Takei, Kasumi; Tachikawa, Mamoru

PATENT ASSIGNEE(S): Dow Corning Asia Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11240892	A	19990907	JP 1998-180997	19980626
JP 4392869	B2	20100106		
US 5994573	A	19991130	US 1998-220122	19981223
PRIORITY APPLN. INFO.:			JP 1997-355210	A 19971224

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): CASREACT 131:199827; MARPAT 131:199827

AB Title compds., useful as materials for electrophotog. photoconductors (no data), are prepared by hydrosilylation of triarylamines containing  $\geq 1$  triarylamine structure composed of  $\text{CH}_2\text{:CHC}_6\text{H}_4\text{N}$  with  $\text{HRnSi(OR')}_3\text{-n}$  ( $n = 0-2$ ;  $\text{R} = \text{C1-10 organic group}$ ;  $\text{R}' = \text{C1-10 hydrocarbyl}$ ) in the presence of carboxylic acids and Pt or Pt compound catalysts. 4-[N,N-di(3,4-xylyl)amino]styrene was reacted with  $\text{HSi(OEt)}_3$  in the presence of AcOH and vinyltetramethyldisiloxane-Pt complex in PhMe at  $50^\circ$  for 30 min to give 90%  $\beta$ -addition product.

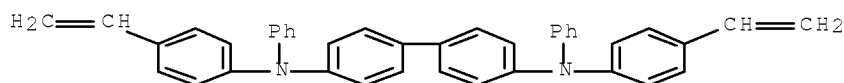
IT 241476-68-6 241476-75-5

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of triarylamines having hydrocarbyloxysilyl-groups by hydrosilylation of vinyltriarylamines with silanes in presence of carboxylic acids)

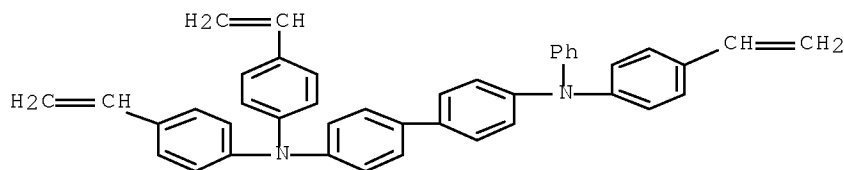
RN 241476-68-6 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'-bis(4-ethenylphenyl)-N4,N4'-diphenyl-  
(CA INDEX NAME)



RN 241476-75-5 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4',N4'-tris(4-ethenylphenyl)-N4-phenyl-  
(CA INDEX NAME)



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD  
(2 CITINGS)

L17 ANSWER 140 OF 144 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 1999:365177 CAPLUS Full-text

DOCUMENT NUMBER: 131:176676

TITLE: Hybrid bilayer organic light-emitting devices based on high Tg hole transport polymers

AUTHOR(S): Jabbour, Ghassan E.; Shaheen, Sean E.; Morrell, Michael M.; Anderson, Jeffrey D.; Lee, Paul A.; Thayumanavan, Sankaran; Barlow, Stephen; Marder, Seth R.; Bellmann, Erika; Grubbs, S. R. H.; Kippelen, B.; Armstrong, N. R.; Peyghambarian, N.

CORPORATE SOURCE: Optical Science Ctr., Univ. Arizona, Tucson, AZ, USA  
SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (1999), 3623(Organic Photonic Materials and Devices), 20-27

CODEN: PSISDG; ISSN: 0277-786X

PUBLISHER: SPIE-The International Society for Optical Engineering

DOCUMENT TYPE: Journal

LANGUAGE: English

AB We report on organic electroluminescent devices based on Al cathode with luminous efficiency of 20 lm/W and external quantum efficiency of 4.6%. When pulsed in air at room temperature and without any encapsulation, high peak brightness of  $4.4 \times 10^6$  cd/m<sup>2</sup> and high efficiency of 4.4 cd/A are obtained. Device quantum efficiency can be increased by tuning the ionization potential of the hole-transport moieties. The high efficiency and peak brightness reported here with Al cathode are encouraging for the manufacturing of stable devices and the development of elec. injected organic lasers.

IT 220716-65-4 220716-67-6 227176-03-6

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)  
(hybrid bilayer organic LEDs containing)

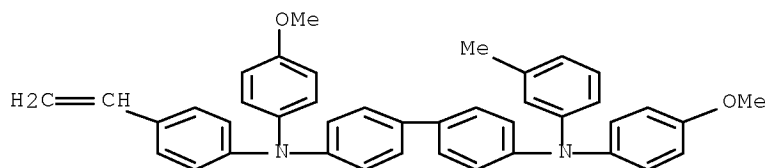
RN 220716-65-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-ethenylphenyl)-N,N'-bis(4-methoxyphenyl)-N'-(3-methylphenyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 220716-60-9

CMF C41 H36 N2 O2



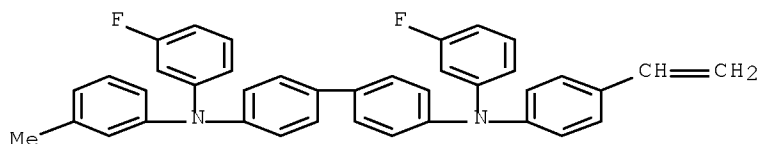
RN 220716-67-6 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-ethenylphenyl)-N,N'-bis(3-fluorophenyl)-N'-(3-methylphenyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 220716-62-1

CMF C39 H30 F2 N2



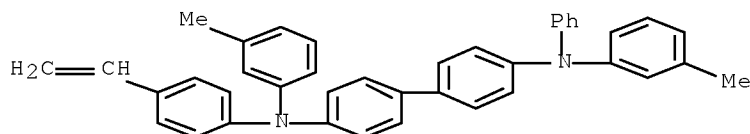
RN 227176-03-6 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-(4-ethenylphenyl)-N4,N4'-bis(3-methylphenyl)-N4'-phenyl-, homopolymer (CA INDEX NAME)

CM 1

CRN 227176-02-5

CMF C40 H34 N2



REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 141 OF 144 CAPLUS COPYRIGHT 2011 ACS on STN

ACCESSION NUMBER: 1999:303424 CAPLUS Full-text

DOCUMENT NUMBER: 131:145320

TITLE: Organic light-emitting diode with 20 lm/W efficiency using a triphenyldiamine side-group polymer as the hole transport layer

AUTHOR(S): Shaheen, S. E.; Jabbour, G. E.; Kippelen, B.; Peyghambarian, N.; Anderson, J. D.; Marder, S. R.; Armstrong, N. R.; Bellmann, E.; Grubbs, R. H.

CORPORATE SOURCE: Optical Sciences Center, University of Arizona, Tucson, AZ, 85721, USA

SOURCE: Applied Physics Letters (1999), 74(21), 3212-3214  
CODEN: APPLAB; ISSN: 0003-6951

PUBLISHER: American Institute of Physics

DOCUMENT TYPE: Journal

LANGUAGE: English

AB We have used triphenyldiamine side-group polymers as hole transport layers in multilayer organic light-emitting diodes using 8-hydroxyquinoline aluminum (Alq3) as an emission layer. The device efficiency systematically increases as the ionization potential of the hole transport layer is shifted further from the work function of the indium-tin-oxide anode. We attribute this trend to better balance of hole and electron charges in the device. An optimized device consisting of a fluorinated version of the polymer as the hole transport layer, quinacridone doped Al as the emission layer, and a LiF/Al cathode results in a peak external luminous efficiency of 20 lm/W.

IT ~~220716-65-4~~ ~~220716-67-6~~ ~~236389-09-6~~

RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(organic light-emitting diode with 20 lm/W efficiency using a triphenyldiamine side-group polymer as hole transport layer)

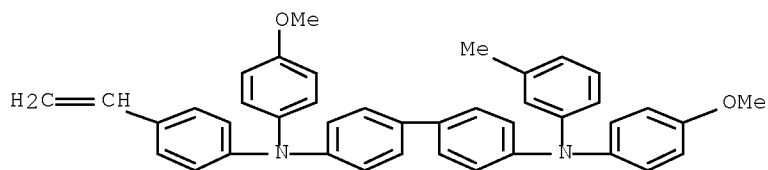
RN 220716-65-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-ethenylphenyl)-N,N'-bis(4-methoxyphenyl)-N'-(3-methylphenyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 220716-60-9

CMF C41 H36 N2 O2



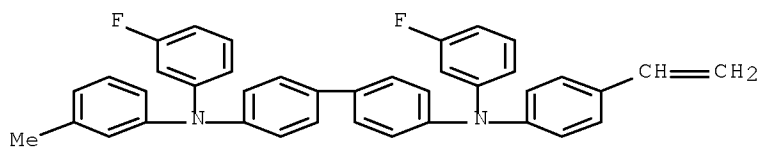
RN 220716-67-6 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-ethenylphenyl)-N,N'-bis(3-fluorophenyl)-N'-(3-methylphenyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 220716-62-1

CMF C39 H30 F2 N2



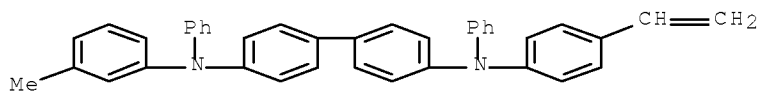
RN 236389-09-6 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-ethenylphenyl)-N'-(3-methylphenyl)-N,N'-diphenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 236389-08-5

CMF C39 H32 N2



OS.CITING REF COUNT: 54 THERE ARE 54 CAPLUS RECORDS THAT CITE THIS RECORD (54 CITINGS)

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT